

3P Hydrosystem 1000 Traffic

Special rainwater filter for installation within standard manhole shafts or plastic shafts 1000mm diameter. Suitable for moderately contaminated waters from trafficked areas up to 750 m².

The cleaned water has such an excellent water quality that it can be discharged directly into soakaways, surface waters and the wider environment.

The filter function is an up-flow process and this allows for a design with a minimal height difference between the inlet and outlet.

In the filter shaft the rainwater is cleaned by basic operation of the following processes:

Sedimentation, Adsorption, Filtration, and Chemical Precipitation.

A hydrodynamic separator built in the base section promotes particulate sedimentation. The water is led into this separator tangentially and generates a radial flow pattern. Particles settle into the silt trap located below the separation chamber. Above the separation chamber are 4 filter elements, occupying the full shaft width such that all water must flow up through the filter. The Siltation of this filter is slow due to the upwards flow, and the fact that the filter is below the water level. The filter is easily exchanged. The system is maintained once a year.



Function Principles:

1. The rainwater from the connected area is fed into the basal section of the filter housing. The angled inlet generates a radial flow pattern.

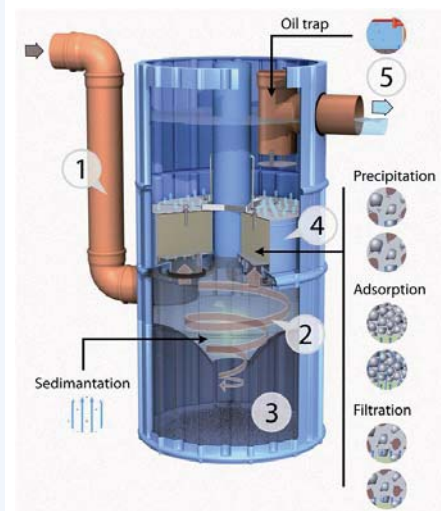
2. The hydrodynamic separator converts turbulent waters into a radial laminar flow pattern, generating particle sedimentation, particularly of the sand fraction.

3. This takes place over an inlet to the lower section of the filter shaft. The sediment is retained in a silt trap chamber below the separator. The silt trap needs to be emptied out at intervals.

4. In the central section of the filter housing is the actual filter, Filter Element: Traffic. The filter element filters out the fine materials in an up-flow process and dissolved materials are precipitated and adsorbed. The filter can be backwashed. When exhausted the filter is easily exchanged.

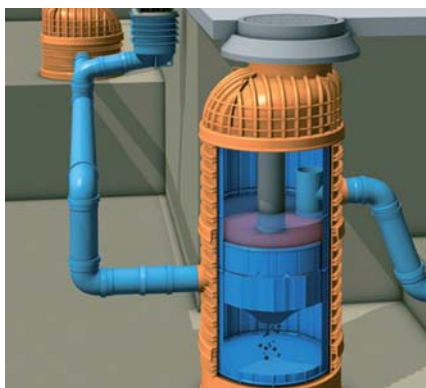
5. The filter element is easily pulled up through the shaft top opening.

6. Above the filter element is the clean water. It passes via an oil separator and then flows via the outlet into soakaways and so on.



Installation Example 1:

Installed in a plastic shaft.



Technical Data:

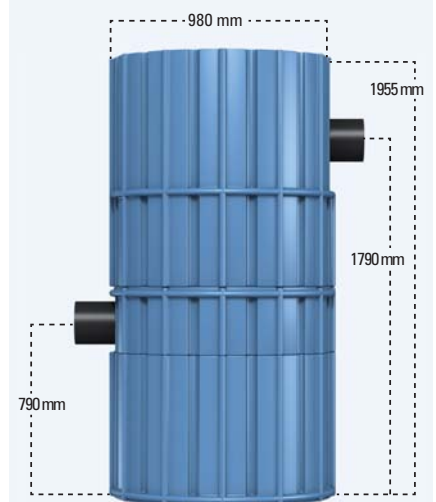
Rainwater filter complying with DIN 1989-2, Type A.
For roof areas up to 750 m².

Connections: DN200.

4 Filter Elements:
Material: Filter Substrate: Traffic
Weight per element: 16 kg.

Housing:
Material: Polyethylene.
Housing: 68 kg.

Total weight: 132 kg



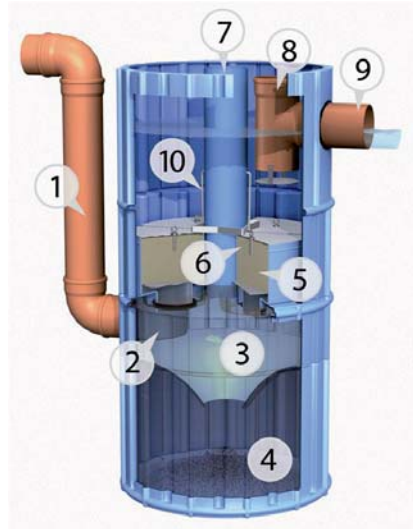
Installation Example 2:

A schematic of the 3P Hydrosystem 1000 Traffic, installed in a concrete shaft. The cleaned roof and surface trafficked area water is safely discharged to a subsurface soakaway.



Product Components

1. Rainwater Inlet (DN 200).
2. Angled Inlet.
3. Separator Chamber.
4. Silt Trap.
5. Filter Elements (4 No.).
6. Removal Device for Filter Element.
7. Overflow Pipe and Cleaning Shaft.
8. Oil Separator and suction pipe.
9. Outlet to storage or to waste.
10. Locking buoyancy control system



Specifications Text:

Number	Quantity	Description	Price in €
1.1	---	Delivery and Installation of a 3P Hydrosystem 1000 Traffic.	

Delivery and installation of the following shaft specification for treatment of moderately contaminated drainage water collected from surface traffic areas:

Installation excavation to be prepared in accordance with relevant specifications and local regulations.

Install Shaft or manholes in accordance with manufacturer's specifications and complying with all National Regulations. For difficult ground conditions consult an expert Engineer. Ensure particular attention is paid to the shaft lid and seal all gaps expertly.

Delivery and Installation of Shaft chamber sections will need to adjust and take account of any height differences to surrounding area if and as required.

Rainwater inlet DN--- connect on shaft with care and make watertight.

Rainwater outlet DN--- connect on shaft with care and make watertight.

Plant type 3P Hydrosystem 1000 Traffic. Connectable area as determined from local rainfall conditions.

Module comprises ready to install PE shaft in concrete surround with hydrodynamic separator, silt trap chamber, Filter Unit to clean water from traffic areas.

Shaft dimensions:

Upper section diameter 1000mm reducing to 625mm at surface, height between 300 and 600mm.

Central section at 1000mm, height 1000mm with outlet point at DN___.

Lower central section at 1000mm diameter and height to 500mm, with inlet port at DN___.

Basal section at 1000mm diameter, height to 550mm.

PE Shaft housing with hydrodynamic separator and removal handles for Filter Elements (4 No), diameter = 980mm, height = 2000mm.

Accessory 1:

Filter element traffic
Art. Nr. 1100115

Every 3P Hydrosystem 1000 Traffic is supplied with 4 filter elements installed.



Parameter	Unit	Parking lot, residential street		Aims of LAWA ¹	Drinking water ²	Seepage ³	Hydro-System ⁵
		from	to	Permissible limit	Permissible limit	Control value	Aim
Physico-chemical parameter				90-percentile			
El. cond.	[µS/cm]	50	2400	-	2500	-	< 1500
pH	[-]	6,4	7,9	-	6,5 - 9,5	-	7,0 - 9,5
Nutrients							
P _{tot}	[mg/L]	0,09	0,30	-	-	-	0,10
NH ₄	[mg/L]	0,0	0,9	-	0,5	-	0,3
NO ₃	[mg/L]	0,0	16,0	-	50,0	-	-
Heavy metals							
Cd	[µg/L]	0,2	1,7	1,0	5,0	5,0	< 1,0
Zn	[µg/L]	15	1.420	500	-	500	< 500
Cu	[µg/L]	21	140	20	2000	50	< 50 ⁴
Pb	[µg/L]	98	170	50	10	25	< 25 ⁴
Ni	[µg/L]	4	70	50	20	50	< 20
Cr	[µg/L]	6	50	50	50	50	< 20
Organic substances							
PAH (EPA)	[µg/L]	0,2	17,1	-	0,1 (6 Subst.)	0,2	< 0,2
MOTH	[mg/L]	0,1	6,5	-	-	0,2	< 0,2

critical parameter, treatment necessary
treatment may be necessary, not generally
no critical parameter

¹ Aims of the German Working Group on water issues of the Federal States and the Federal Government (LAWA) for Surface Water,

² Permissible limit of the German Drinking Water Ordinance (2001) Usage as potable water (1998)

³ Control value for seepage of the German Federal Soil Protection Act an Ordinance (1999) according to § 8 1, 2

⁴ for copper- and lead-roofs a second treatment step is necessary

⁵ the aims of the system refer to average annual loads

Observations:

Packaging Information:

1 unit per pallet.

EAN: